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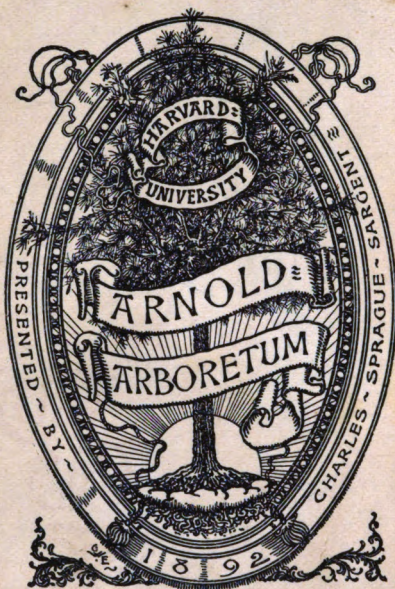
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AINU ECONOMIC PLANTS.

BY REV. JOHN BACHELOR AND DR. KINGO MIYABE.

[*Read April 12, 1893.*]

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AINU ECONOMIC PLANTS.

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INTRODUCTION.

There is no field in the domain of economic botany more interesting and full of promise than that among a barbarous race which has wholly subsisted for untold ages on the products of the forest and the sea, and the spoils of the chase. Such a field one naturally finds among the Ainu of Hokkaidō.

That a subject of such interest should have been almost wholly neglected by recent foreign writers on this race is easily to be explained by the nature of the subject, for it demands in an author a happy combination of the thorough knowledge of the flora of the region with that of the language and customs of the people. If, therefore any explanation be sought for the joint authorship of this paper the reason will be found in this fact.

Works on this subject by Japanese writers and botanists are not wanting. As early as the later part of the eighteenth century, the Tokugawa Government sent a young doctor and artist named Tani Buntan (谷文旦) to Yezo to investigate the natural products of the island, having special regard to medicine. The results of his

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researches are supposed to be embodied in a manuscript called the Tōi-Bussanshi (東夷物産志) which is a treatise on the natural products of Eastern Yezo.

About the year 1810, a work called the Yezo Sō-moku-shiryō (蝦夷草木志料) or "Materials for a Flora of Yezo," by So Shōkei (曾尚啓) appeared; and about the year 1850 a manuscript in two volumes was written on the natural products of Yezo, and called the Yezo Bussanshi (蝦夷物産誌.) This work is said to be the result of the joint authorship of several naturalists then residing in Hakodate and among whom is to be counted Kurimoto Jyoun (栗本鄰雲) who is now a member of the Gakushi-in of Tokyō. In the diaries of travel in different parts of Yezo by Matsunura Takeshiro (松浦竹四郎) are to be found many interesting facts with regard to Ainu economic plants.

All the statements found in these volumes were collected and published in the year 1883 by one of the authors of the present work in the 34th volume of the Hokkaidō-shi (北海道志). The most recent contribution to the subject is also by the same author and is to be found in the first and second numbers of a journal called the Keirin (藎林) published in Sapporo in the months of May and July 1892. It is on the medicinal plants and also on the trees and shrubs used by the Ainu.

These works were consulted by us in the preparation of the present paper, but those statements which have not been confirmed by the Ainu we have personally questioned about them have been all excluded. They may be published by us on some future occasion, as some of them have uncommon interest. The present paper therefore contains little but what we have seen used ourselves, or are perfectly certain are known and used by the Ainu.

In the preparation of this paper the Ainu of Oshamambe, Repunge, Aputa, Usu, Horobets, Chitose, Osatnai, Mukawa, Saru, Tokachi, Kushiro, and the Kurile Islands

among others have been questioned, and though one plant may not be known in one district, it is sometimes found to be both known and used in another.

Our best thanks are due to K. Jimbo, Esq., who has most assiduously laboured in the matter of collecting and verifying Ainu names and in procuring specimens for identification.

This little work must not be considered exhaustive; we feel that the subject has but just been commenced and intend steadily to pursue our studies. We hope on some future occasion to present a paper to this Society on the fibrous plants and on the trees and shrubs used by the Ainu.

PART I.

AINU MEDICINAL PLANTS.

1.—ARIKKO.

Thalictrum aquilegifolium, L.

KARAMATSU-SŌ. カラマツサウ. The Feather Columbine.

The roots of this plant eaten either raw or roasted are said to cure pains in the stomach. They are very bitter to the taste. Sometimes, however, on occasions of stomach-ache a decoction is made by steeping the roots in boiling water, and a good strong dose taken. This is said to work wonders. Should a person wound his hand when at work, or thrust some sharp object into his foot when walking through the forest, he will take the roots of this plant, chew them to a paste, and apply to the wounded part to prevent suppuration.

Some of the Ainu take the leaves of this herb, roll them between the hands to bruise and make them soft, and then plaster over any part of the body where there should be an internal pain or contusion.

2. HORAP or ORAP.

Paeonia obovata, Maxim.

YAMA-SHAKUYAKU (ヤマシヤクヤク).

The root of this plant is dug up, dried and preserved for medicinal purposes. It has a bitter taste. In cases of stomach-ache some Ainu take a piece of the root, and swallow it with water. It is said to have an immediate effect. The root chewed to a paste is sometimes applied to aching joints of the body. For ordinary slight ailments, a decoction of this root is commonly recommended.

In Mukawa and-elsewhere, the seeds of this paeony are recommended as a remedy for sore eyes; when used for this purpose, the seeds are chewed up and put in a piece of clean white cloth; the juice is then squeezed out into the eyes. In Usu, when a person suffers from a pain in his ears, the smoke from a mixture of tobacco and powdered seeds is blown into them.

3.—OPKE-NI OR OMAUKUSH-NI.

Magnolia Kobus, DC.

KOBUSHI (コブシ).

The bark is the part employed as medicine. A decoction is taken in time of colds. As in the case of *Pukusa* (see No. 39 and 120) and *Kikin-ni* (see No. 13 and 58.), the bark of this *Magnolia* is believed to have the mysterious power of driving away the demons of disease. In times of a pestilence, a piece of the bark is commonly put into the drinking water as a preventive. Branches are placed over doors and windows as a charm. A thin decoction is often made and drunk in place of tea.

4.—REPNIHAT.

Schizandra chinensis, Bail.

CHŌSEN-GOMISHI (テウセンゴミシ).

The vines are the part generally used as medicine, although the fruit is also sometimes so used. By some Ainu it is believed to be a specific for colds. When

taken for colds, a piece of the vine is rolled up and put into a cup containing boiling water. The thin decoction thus made is taken. It is also recommended by some Ainu as a remedy for sea-sickness.

5. OTOMPUI-KINA.

Chelidonium majus, L.

KUSA-NO-WO. (クサノワウ). The Common Celandine.

The stem and leaves, after having been softened by dipping into hot water, are applied externally to any place where there are internal pains caused by a fall or contusion. Some Ainu believe the yellow juice of this plant destroys warts. This may possibly have been learned from the Japanese. It is also reputed to be an antidote against snake-poisoning. Some Ainu apply this plant to the stomach to relieve internal pains. A most peculiar practice is, when a child suffers from constipation, to place a small piece of bruised stem in the anus. This is said to have an immediate effect.

6.—RITEN-KINA.

Stellaria media, L.

HAKOBE (ハコベ). The Chickweed.

This common weed is widely used for external application to bruises or to any part of the body where the bones ache. The stems and leaves are steeped in hot water before being applied.

7.—KUTCHI-PUNGARA.

Actinidia arguta, Planch.

KOKUWA (コクハ).

In the spring of the year, when the vine of this climber is cut, sap flows out freely and in large quantities. The sap is used as a medicine and is believed to be a good expectorant. (See No. 51).

8.—SHIKEREBE-NI.

Phellodendron amurense, Rupr.

KIWADA OR SHIKORO. (キハダ. シコロ).

The inner bark of this tree is much esteemed by the Ainu as a medicine. It is yellow in colour and extremely bitter to the taste. It is applied externally over any portion of the body where there should be internal pain, particularly such as may have been caused by falling from a horse, or by any similar accident. It is also applied to burns, scalds and sore eyes. The bark is bruised and made damp either by chewing or with water before it is used. Persons who travel in the interior of this island and who are called upon to wade streams the greater part of the day, suffer greatly from a skin disease called *mizu-mushi* by the Japanese. This disease attacks the spaces between the toes, quickly making them quite raw. An application or two of the inner bark of the *shikerebe-ni* is said to remove the malady.

The berries of this tree are much prized by some Ainu as a medicine; they are said to be a good expectorant. In some places the berries are used in cases where the muscles have been strained and caused to swell. On such occasions a few of the berries are chewed into a pasty mass and put upon the affected part. The fruit is also used as an article of food.

9.—SHIU-NI or YUK-RAIGE-NI.

Picus asma ailanthoides, Planch.

NIGAKI (ニガキ).

The bark of this tree has a very bitter taste which is believed by the Ainu to be poisonous. A strong decoction is often used to kill head-lice. Eruptions on the scalps of children are also sometimes washed with it. It is said that should deer eat the bark of this tree they die very soon after. Hence the name, which means "Deer-killing-tree."

10.—TOCHI-NI.

Æsculus turbinata, Bl.

TOCHI-NO-KI (トチノキ). The Horse-chestnut.

The nuts of this plant are often used as a medicine. They are taken and dried for future use. When required they are soaked and well scraped. The scrapings are then steeped in water and the decoction used to wash wounds with. The Ainu often use it for washing the eyes of horses when they run water or discharge matter.

11.—OIKARA.

Pueraria Thunbergiana, Benth.

KUZU. (クズ)

The root of this plant is dug up and used as a remedy for aches and bruises. The root is thoroughly roasted at a fire and the affected part of the body well rubbed with it. The root-stock of the *Pueraria* is rich in very fine starch and is much esteemed by the Japanese; but the Ainu know nothing of it as an article of food.

12.—CHIKUBE-NI.

Cladrastis amurensis, Benth. var. *Buergeri*, Max.

INU-ENJU (イヌエンジュ).

The bark of this tree is believed to have a poisonous property. It is externally applied on the body where there is internal pain.

13.—KIKIN-NI.

Prunus Padus, L.

YEZO-UWAMIZU-ZAKURA.(エゾウハミヅザクラ). The Bird-Cherry.

The bark of this tree is sometimes steeped in hot water and used as a remedy for stomach-ache. The decoction is drunk.

The bark is also sometimes used as a beverage in place of tea. At Saru and elsewhere this plant is believed to have the power of driving away the demons of disease and is therefore used as a charm.

14. TOKAOMAP.

Cicuta virosa, L.

DOKUZERI (ドクゼリ). The Cowbane or Water Hemlock.

The root-stock of this plant is deadly poisonous. Some Ainu apply externally the charred root-stock when there is a pain in the bone.

15—UPEU.

Seseli Libanotis, Koch var. *sibirica*, DC.

IBUKI-BÔFÛ NO ISSHU (イブキバウフウノ一種).

A kind of umbelliferous herb having a strong medicinal smell and flavour. It is much used as a medicine and is said to be good for every complaint. It grows in dry places—especially on sandy beaches. The root is the part used. In times of epidemic disease the *upeu* is much sought after by the Ainu for it is thought to be a great preventive of illness and is said to act as a kind of charm. I have often seen them chewing it, and found it hanging up in huts to keep off sickness. During a time when small-pox was raging I saw a dog, with some tied to his collar, driven round a house! This plant may be taken at any time in place of tea or water and is, indeed, often preferred. A decoction is usually made by steeping the herb in hot water; and is so taken in cases of severe cold. Some of the old Ainu mix small pieces of this root with their tobacco to improve its flavour.

16.—YAKARA-KINA or MO-SHIU-KINA.

Angelica refracta, Fr. Schm.

ÔBA-SENKYU (オホバセンキウ).

A kind of umbelliferous plant found growing in wet and damp places. It is used for medicinal purposes, and

is said to be especially good in cases of pain in the stomach. The root-stock only is used. It is generally taken in decoction though sometimes it is put into soup and eaten with the food.

From the fact that upon procuring samples of the dried root-stocks of this *Angelica* at the villages of Saru and Chitose in the month of March, it seems that they must form one of their common medicines. They are cut up very small with a knife, and put in hot water. The decoction thus made is drunk, herb and all. At Saru it is taken in time of chest-troubles, and at Chitose, in cases of stomach-ache and chest-troubles.

17.—CHIMA-KINA.

Aralia cordata, Thunb.

UDO. (ウド) The Spikenard.

Some Ainu use the root-stock of this plant for wounds inflicted by bears or other animals. A decoction is often made and the wounds washed with it, after which fresh slices are applied. The spikenard is also used for food by some Ainu.

18.—OINAMAT.

Adenocaulon adhaerescens, Maxim.

NOBUKI. (ノブキ).

When a person is poisoned by sumach (*Rhus*), the leaves of this plant softened by warming at a fire are generally applied.

19.—NOYA.

Artemisia vulgaris, L.

YOMOGI. (ヨモギ) The Mugwort.

When one has taken cold, the stem and leaves of the mugwort are boiled in a pan, and a patient is made to inhale the steam, with a cloth covered over his head and the pan, until he or she freely perspires. Sometimes in similar cases, a decoction of the stems and leaves are drunk. A

moxa is sometimes made by pounding the leaves. This plant is also often to be found hung up in houses as a charm against evil, but particularly against disease.

20.—KAMUI-NOYA.

Artemisia sacrorum, Ledeb., var. *latiloba*, Ledeb.

IWAYOMOGI. (イハヨモギ).

This kind of mugwort grows chiefly on rocky cliffs, and sometimes on the sandy banks of rivers. It is sub-shrubby in habit, and has a strong medicinal odour. It is largely used as a medicine by the Ainu of Kushiro, Kitami and Teshio. The name *Kamui-noya* is also applied by some Ainu to other species of *Artemisia*. (*A. Stelleriana*, Bess. and *A. Japonica*, Thunb.)

21.—MAKAYO.

The flower-shoot of *Petasites japonicus*, Miq.

FUKI-NO-TÔ. (フキノタフ).

This flower-shoot is sometimes used by the Ainu for food, but is often taken in strong decoction for heavy colds. It is very bitter to the taste. (See *Korokoni*, No. 80).

22.—SETA-KOROKONI.

Arctium Lappa, L.

Gobô. (ゴボウ) The Burdock.

The young leaves of this plant are softened by rolling them between the palms. They are then applied to skin eruptions. It may also be remarked that the roots of this plant are sometimes boiled and eaten as food.

23.—EPOTAN-NI.

Ligustrum medium, Fr. et Sav.

ÔBA-IBOTA-NO-KI. (オホバイボタノキ).

Some Ainu believe that chop-sticks made from the wood of this shrub, if always used, will prevent the teeth from becoming carious.

24.—IKEMA or PENUP.

Cynanchum caudatum, Maxim.

IKEMA. (イケマ).

A kind of Asclepiadaceous plant used both for food and medicine. It is said to be good for any complaint, but is a special remedy for small-pox. To wounds of all kinds a thick decoction when applied is said to prevent the formation of pus. Half cooked roots are said to have an intoxicating effect, and to cause loss of all control over the limbs and to do away with the sensation of the skin. The root is dried and stored up for future use, however, it is sometimes taken fresh either roasted or boiled and is said to have a very sweet flavor. In time of epidemic sickness the root is chewed in its raw state and the juice blown from the mouth sometimes upon and over the afflicted person, sometimes all over the inside of the hut and through the door and windows, and sometimes, again, round the house and even whole villages. When so used the *ikema* or *penup* is supposed to act as a kind of charm to drive away the demon of sickness. Those who use this plant so are generally intoxicated by it.

It is also said to be very efficacious as an antidote to poison. As an article of food this plant is used very sparingly and well cooked.

25.—CHIUKOMAU.

Physalis Alkekengi, L.

HÖZUKI (ホヅキ). The Winter Cherry.

When there is a pain in the hips, the fruit is smashed and applied as a poultice.

26.—SETA-ENDO.

Elsholtzia cristata, Willd.

NAGINATA-KÖJU (ナギナタカウジユ).

The decoction of this highly aromatic plant which is commonly found around the huts of the Ainu is prescribed to persons suffering from the after effects of intoxication. It is also used in the place of tea.

27.—TOIORUSH-MUN or KAMUI-KEU-KINA.

Mentha arvensis, L. var *vulgaris*, Benth.

HAKKA (ハクカ). The Peppermint.

The bruised leaves of this plant are applied to any place where a person is in pain.

28.—SHUMNU-HASH.

Lindera hypoglauca, Maxim.

KUROMOJI or TORIKOSHIBA. (クロモジ.トリコシバ)

Among some Ainu this plant is looked upon as a good remedy for stomach-ache, and has a very nice smell and flavour. The wood is broken up fine and boiled. When cool a dose is taken. Sometimes, however, the decoction is poured over rice or millet and taken.

29.—KETU-HASH.

Daphne chinensis, Lam., var. *breviflora*.

KOSHŌNOKI or KARASU-SHIKIMI. (コショノキ.カラスシキミ)

The whole plant is reputed to have a poisonous property, but especially its berries and roots. Some Ainu burn the roots to charcoal and pound them to powder. This powder is applied to bruises or places where there is any internal pain; but it is never applied to cut-wounds.

30.—NI-HARU.

Viscum album, L.

YADORIGI or HOYA. (ヤドリギ.ホヤ). The Mistletoe.

The Ainu like many nations of northern origin hold the mistletoe in peculiar veneration. They look upon it as a medicine good in almost every disease. It is taken either in food or separately as a decoction. The leaves are used in preference to the berries, the latter being of too sticky a nature for general purposes. Some Ainu have been known to use the mistletoe leaves merely for tea without any reference to their supposed medicinal properties, while others sometimes mix it with their stews.

By many Ainu the mistletoe is supposed to have the power of making the gardens bear plentifully. When used for this purpose the leaves are cut up into fine pieces, and after having been prayed over, are sown with the millet and other seeds; a little also being eaten with the food. Barren women have also been known to eat the mistletoe in order to be made to bear children. That mistletoe which grows upon the willows is supposed to have the greatest efficacy because the willow is looked upon by the Ainu as being a sacred tree. (See No. 100.)

81.—KAPAI.

Laportea bulbifera, Wedd.

MUKAGO-IRAKUSA. (ムカゴイラクサ).

The stems and leaves of this plant are, after having been well roasted and mashed, used as fomentation for ulcers. (See also No. 105).

82.—KAMUI-TAT.

Betula Ermani, Cham.

TAKE-KAMBA. (タケカンバ).

The bark of this birch can be peeled off in very thin layers. Some of these papery layers are sometimes pasted over wounds in place of plasters. They are said to possess good healing properties and to prevent inflammation.

82.—b. NITAT-KENE.

Alnus japonica, Miq. f. 3.

HAN-NO-KI OR YACHIBA-HAN-NO-KI. (ハンノキ. ヤチバハンノキ)

The Alder.

A decoction made by steeping the bark of this tree in hot water is said to be good for pains in the stomach. Ainu women take a dose of this medicine immediately after child-birth. The special name of this decoction is *Ichuptasarep*. It is said to be exceedingly bitter to the taste.

33.—URA-SUSU or URAI-SUSU.

Salix multinervis, Fr. et Sav.

KORI-YANAGI. (コリヤナギ).

The fresh bark of this shrubby willow is widely used by the Ainu for application to cut or bruised surfaces. The bark is cut into fine shreds with a knife, and plunged for a short time into hot water to make it soft. It is then applied to the wound and is retained there by bandage. The bark is renewed from time to time.

34.—YAI-NI or NUP-KURUN-NI.

Populus tremula, L.

HAKOYANAGI. (ハコヤナギ).

The fresh bark is cut up into fine shreds and applied to cut-wounds to prevent the formation of pus.

35.—SHUNGU-UNKOTUK.

The resin of *Picea ajanensis*, Fisch.

YEZO-MATSU NO YANI. (エゾマツノヤニ).

Some Ainu apply the resin of this spruce to cut wounds to hasten their healing.

36.—NIMAK-KOTUK.

Cremastra Wallichiana, Lindl.

SAIHAI-RAN OR HAKKURI. (サイハイラン . ハツクリ).

The root of this orchid is used as a remedy for tooth-ache. It is merely chewed and then expectorated. It is of a very sticky nature and clings to the teeth very tenaciously, hence its name. *Nimak*, "teeth," and *kotuk*, "to adhere to." Sometimes a stiff paste or ointment is made of this herb and spread over swellings and boils as a remedy. However, in whatever way it may be used it is not supposed to be a very certain cure, and is not applied when other more favourite remedies are at hand. A strong glue is made from the roots of the plant by pounding them well.

37.—SHUWONTE.

Smilax herbacea, L.

SHIODE. (シホデ). The Carrion Flower.

The application of the softened leaves is said to heal troubles of the eyes. They are also applied to skin eruptions and wounds.

38.—ETORURATKIP.

Polygonatum giganteum, Dietr., var. *falcatum*,
Maxim.

NARUKO-YURI. (ナルコユリ). The Solomon's Seal.

A piece of the root-stock of this plant is sometimes put into the mouth of a child who suffers from laceration of the tongue and lips and is allowed to remain there until the pain is relieved.

39.—PUKUSA or HURARUI-KINA.

Allium victorialis, L.

GYOJYA-NINNIKU or KITOBIRU. (ギョウジヤニンニク. キトビル).

This herb is said to be specially useful as a remedy for colds. It is also sometimes to be found hung up in door-ways and entrances and by windows as a charm against epidemic disease.

40.—SURUGU-KUSURI.

Acorus Calamus, L.

SHŌBU. (シヤウブ). The Sweet Flag.

The root-stock of this plant is extensively used by the Ainu as a medicine. It is dried and kept with *ikema* and *moshiu-kina*. Pains in the stomach caused by drinking bad water, or by eating improper food, are said to be relieved by taking a decoction of this root-stock. It is also said to be efficacious in cases of cold and headache.

41.—SHUPUYANUP.

Lycoperdon sps.

KITSUNE-NO-CHABUKURO. (キツネノチャブクロ).

The Puff-ball.

Spores of this fungus are sometimes outwardly applied by the Ainu to cure pains in the body. It is also applied as a remedy for scalds and burns.

42.—SHIU-KARUSH or KUI-KARUSH.

Polyporus officinalis, Fr.

EBURIKO or TOBOSHI (エブリユ. トボシ).

A kind of fungus growing upon larch tree and having a very bitter taste. This polyporus is used by some Ainu as a medicine. It is chewed and rubbed into painful places. But generally its decoction is swallowed as a remedy for stomach-ache. It comes chiefly from the Kurile Islands and was greatly prized by the old Japanese doctors.

43.—UMMA-SHIKARUSH.

A kind of toadstool which grows only from horse-droppings. It is sometimes applied to wounds, scalds and burns as a remedy.

44.—NIKAMBI.

The white leathery layers of the fungus mycelium found between the bark and wood of dead oak, elm or ash trees. It is applied to wounds on the body to stop hæmorrhage.

PART II.

AINU EDIBLE PLANTS.

45.—PUKUSA-KINA.

Anemone flaccida, Fr. Schm.

GAJŌ-SŌ or FUKUBERA. (ガジヤウサウ. フクベラ).

By some Ainu it is also called *ohau-kina*, "stew plant." The leaves and stems of this plant form an article of diet among the Ainu. The people gather this herb in large quantities when it is in blossom in the spring and dry it for winter use, though some of it is used green. It is usually eaten boiled with fish, or occasionally put into soup.

46.—PUI.

Caltha palustris, L.

RYUKINKWA. (リウキンクワ). The Marsh Marigold.

The slender roots of this plant are gathered and eaten, but not the stems and leaves. Some are eaten fresh and others dried. In either case they are generally boiled with fish, rice or millet, and sometimes with oil of sardines. Some Ainu pound them to cakes before eating.

47.—KAPATO.

Nuphar japonicum, DC.

KŌHONE. (カホネ).

The thick horizontal root-stocks of this plant, which are rich in starch, are used as an article of diet. They are first cut into small pieces and scalded, and then either

cooked with millet or rice, or put into a soup. The root-stocks are also dried and kept for winter use, and are said to be very delicious.

48.—TOMA.

Corydalis ambigua, Cham. et Schlecht.

ENGOSAKU. (エンゴサク).

The bulbs of this plant are extensively eaten by the Ainu, especially by those in the Ishikari valley, Saghalien, and Southern Kuriles. The bulb has a slightly bitter taste, which is removed by repeated boilings in water. In Etorup, the Ainu boil with a certain kind of earth to remove its bitterness. They are eaten either simply boiled or mixed with rice. In Saghalien, it is said that they are cooked generally with the fat of seals. The bulbs are often boiled and then dried for future use.

49.—SHIBE-KINA.

Cardamine hirsuta, L.

TANETSUKE-BANA. (タチツケバナ).

The leaves and stems of this herb are first parboiled and then eaten as salad.

50.—RISESSERI or NISESSERI.

Cardamine yezoensis, Maxim.

AINU-WASABI. (アイヌワサビ).

In the early spring, the young leaves and new root-stocks are gathered for food, the older portions of the roots being thrown away. To increase pungency, the Ainu in some places have learned to put the leaves, together with the root-stocks, into bottles and keep them well stopped a day or so before using. The *Risesseri* is generally boiled before eaten.

51.—KUTCHI.

The fruit of *Actinidia arguta*, Planch.

KOKUWA. (コクハ).

This fruit is eaten by Ainu. It is also greatly relished by bears. It has a delicious taste when well ripened though it is slightly astringent and mildly purgative. The fruit ripens after the first frost.

52.—MATATAMBU.

Actinidia polygama, Planch.

MATATABI. (マタタビ).

The fruit of this plant is eaten by the Ainu. The unripe berries are extremely acrid and are sparingly cooked in stews to give them flavour. Only the well ripened fruit is eaten raw.

53.—KANCHIKAMA-NI.

Zanthoxylum piperitum, DC.

ZANSHO. (サンセウ).

The leaves and fruit of this shrub are often cooked in soup and used as a condiment. The wood, being of a very tough nature, is often made into hooks and used for getting seaweed (*Laminaria*, Japanese and Ainu, *kombu*) out of the sea.

54.—SHIKEREBE.

The fruit of *Phellodendron amurense*, Rupr.

SHIKONOHEI. (シコノヘイ).

These berries form an article of diet among the Ainu who collect them in large quantities during the autumn months and dry for future use. Generally they are very sweet and aromatic in flavor, though sometimes some of the trees are said to yield berries having an astringent taste. The Ainu generally boil this fruit with beans, but a very favourite way is to cook it with the fat of deer or bears. These berries are also used as a medicine (see *Shikerebe-ni*) No. 8.

55.—HAT.

The berry of *Vitis Coignetia*, *Pulliat*.

YAMA-BUDO. (ヤマブドウ). The Wild Grape.

The wild grapes are relished by the Ainu, and also by bears. The Ainu eat them either raw or by keeping them in a cup with salt for a day or two.

56.—MENASARU or NOIPORO-KINA.

Lathyrus maritimus, *Bigel*.

HAMA-ENDO. (ハマエンドウ) The Beach Pea.

The beans are sometimes collected and eaten.

57.—AHA.

Amphicarpaea Edgeworthii, *Benth.* var. *japonica*,
Oliver.

GIN-MAME or YABU-MAME. (ギンマメ . ヤブマメ).

The underground seeds are gathered in large quantities. They are eaten boiled either alone or with rice, after being cleared from the coatings, roots and young shoots. They are said to be very sweet, tasting something like chestnuts. A peculiarity about this leguminous plant is that it has two kinds of flowers, one being an ordinary purplish bean-like flower, and another a subterranean inconspicuous flower, which never opens but is so constructed as to bear seeds without any help of external agencies, (cleistogamous flower). The subterranean seeds are about 7-10 times larger than those which are produced in the above ground pods. The former are known as *Aha*, and the latter as *Aha-cha*. The Ahacha are also collected, and eaten commonly boiled with rice. (*Aha* is applied to both the nut and vine, though more properly the vine should be called *Ahara*).

58.—KIKIN-NI.

Prunus Padus, *L.*

EZO-UWAMIZU-ZAKURA. (エゾウハミヅザクラ)

The fruit is eaten. (See No. 13.)

59.—YUK-EMAURI, KAMUI-HUREP,
or *Hure-aiush-ni*.

Rubus crataegifolius, Bunge.

TACHI-ICHIGO. (タチイチゴ).

The berries are eaten.

60.—EMAURI.

Rubus parvifolius, L.

NAWASHIROICHIGO. (ナハシロイチゴ).

The berries of this plant are eaten by the Ainu.

61.—KAMUI-EMAURI, or YUK-EMAURI.

Rubus phenicolasius, Maxim.

EBIGARA-ICHIGO. (エビガライチゴ).

The berries are eaten. They have a fine flavour.

62.—KUNNE-EMAURI.

Rubus occidentalis, L. var. *japonicus*, Miyabe.

KURO-CHIGO. (クロイチゴ).

The berries of this plant are eaten by the Ainu. They are especially abundant on the eastern coast of Hokkaidō.

63.—EMAURI or YAYAN-HUREP.

Rubus Idaeus, L. var. *strigosus*, Maxim.

YEZO-ICHIGO. (エゾイチゴ).

This raspberry is widely distributed throughout the island of Ezo. The berries are much esteemed by the Ainu.

64.—HUREP.

Fragaria elatior, Ehrh.

SHIROBANA-NO-HEBICHIGO. (シロバナノヘビイチゴ).

The Wild Strawberry.

These are very much relished by the Ainu. They are especially abundant in the vicinity of Nemuro, and in the high mountains of Hokkaidō.

65.—MAU.

The fruit of *Rosa rugosa*, Thunb.

HAMA-NASU. (ハマナス).

This plant is very plentiful on sandy dunes and near the sea shores of Yezo. The hips are used as an article of food by the Ainu. They are eaten raw and are much liked by the children.

66. SETAN-NI or SETAI-NI.

Pyrus Toringo, Sieb.

ZUMI or SANNASHI. (ズミ. サンナシ).

The small fruits, which are called *setara* in Ainu, are used as an article of food. Children especially are fond of them.

67.—IWA-KIKIN-NI.

Pyrus Aucuparia, Gartn. var. *japonica*, Maxim.

NANAKAMADO. (ナナカマド.) The Mountain Ash.

The red fruit is sometimes eaten.

68.—ABE-NI.

Crataegus chlorosarca, Maxim.

YEZO-SANZASHI. (エゾサンザシ.) The Blackpome Hawthorn.

The pome of this hawthorn is black and fleshy. It is eaten by the Ainu.

69.—PEKAMBE.

Trapa incisa, Sieb. et Zucc.

HIME-BISHI. (ヒメビシ).

The fruit of this plant forms an article of diet especially among the Ainu who live near the marshes, and is eaten either boiled or roasted. It is often boiled with rice. To split the hard shell of the fruit the Ainu of the Ishikari valley do it very skilfully with their knives, while those of the Tokachi valley usually use their teeth. When it is eaten raw it is said to cause diarrhoea.

70.—MICHIPA.

Cryptotaenia japonica, *Hausskn.*

MITSUBA. (ミツバ.) The Japanese Honewort.

The stems of this plant, together with the leaves are used as food. Sometimes they are boiled green, and at others they are first salted. This use was probably learned from the Japanese. The *michipa* is the Ainu corruption of the Japanese word *mitsuba*.

71.—ICHARI-KINA or ICHARABO.

Anthriscus sylvestris, *Hoffm.*

SHAKU or KOJYAKU. (シヤク.コジヤク)

The Wild Chervil.

The fresh shoots of this plant are often used in stews as a vegetable. Many of the Ainu collect the young shoots, steep them in boiling water, and then salt for future use.

72.—SHIU-KINA.

Angelica ursina, *Maxim.*

YEZO-NYU. (エゾニウ).

This plant has a very bitter taste and is not generally eaten. However, in some districts, as for instance in Tokachi, the Ainu eat the white interior stalk after having peeled off the bark and expelled as much of the whitish colored juice as possible. This is the largest umbelliferous plant known in Hokkaidō.

73.—CHIFUE or CHISHUYE.

Angelica edulis, *Miyabe.*

AMA-NYU. (アマニウ).

The stalk of this plant is eaten by the Ainu either raw or dried. It has a sweet taste. It is much hunted after by the children. For preserving, the stalk is cut into short pieces, skinned, split, and then dried. Some Ainu prefer to eat it boiled soft.

74.—PITTOK.

Heracleum lanatum, Michx.

HANA-UDO. (ハナウド). The Cow Parsnip.

This herb is used by the Ainu for food. It is sometimes eaten raw, though generally it is first roasted and peeled. It is never boiled or put into stew. Bears are said to be remarkably fond of this plant. In the Saru district the stalks are eaten both fresh and dried.

Young shoots which are largely collected and eaten in spring are called *haru*, while *pittock* is applied only to a fully grown plant.

75.—CHIMA-KINA.

Aralia cordata, Thunb.

UDO. (ウド). The Spikenard.

The stems of this plant, even to fully-grown ones, are, after having been first peeled, boiled and eaten as a vegetable. It is also sometimes used as a medicine. (See No. 17.)

76.—ENENGE-NI, ENINGE-NI, or SHUAT-NI.

Aralia spinosa, L.

TARANOKI or TARAMBO. (タラノキ. タランボ).

The Angelica Tree.

The Ainu boil the young leaves of this plant in their stews and eat them as vegetables.

77.—ENUMI-TANNE.

Lonicera caerulea, L.

YONOMI. (ヨノミ).

This shrub is very abundant in the marshes which lie between Chitose and Tomakomai. The juicy, dark-coloured berries are collected and much esteemed by the Ainu. They are eaten raw.

78.—NOYA.

Artemisia vulgaris, L.

YOMOGI. (ヨモギ). The Mugwort.

The stem and leaves of this plant are used as food when very young in the early spring. They are taken and first boiled; next they are well pounded in a wooden mortar; and lastly made into cakes and dried for future consumption. A good deal, however, is eaten at once, having been first pounded with millet, or, if obtainable, rice. When the dried cakes are to be eaten they are re-boiled and pounded with millet or rice. This is said to be a very nutritious food and of itself quite sufficient to sustain life and keep the body in a healthy condition. It is said to be of a very sweet flavor, and the people are remarkably fond of it. The ancient Ainu used to live upon this herb a great deal, we are told, and it has been the means of keeping them alive throughout more than one famine. Later on in the year, when the plant becomes older, the leaves only are taken (without the stem) and dried for future use. (See No. 19).

79.—KAMUI-NOYA.

Artemisia Stelleriana, Bess.

SHIRO-YOMOGI. (シロヨモギ).

This kind of mugwort grows on sandy beaches, and is readily distinguished by its white colour. It is eaten in the same way as the common mugwort, but does not appear to be used as a medicine. The name *kamui-noya* is also applied by some Ainu to other species of *Artemisia*, *A. sacrorum*, Ledeb. (See No. 20,) and *A. japonica*, Thunb.

80.—KOROKONI.

Petasites japonicus, Miq.

FUKI. (フキ).

This plant is very much used by the Ainu for food. They eat the stalks of the leaves only as a general thing, though some of the Japanese as well as the Ainu use the flower called

makayo as well. The stalks are very often roasted over a fire and then skinned and eaten, though as a rule they are boiled in the stews. They are also largely made into pickle by salting the boiled stalks together with the leaves of the *Ikokuttara* (see No. 96) which are used to give them a reddish tinge. Sometimes, however, salt is entirely dispensed with.

81.—PET-KUTU or WAKKA-KUTTARA.

Senecio sagittatus, Schultz Bip.

YOBUSUMASO or BONA. (ヨブスマサウ・ボウナ).

Also called by some Ainu, especially by children, *Chirekte-kuttara* and *Rek-kuttara*, on account of the noise that can be produced by blowing down the stem. *Chirekte*, meaning "to play," as a musical instrument. By other Ainu it is sometimes called *Wakka-kuttara*, because water may be drawn up the stem into the mouth. The young shoots are eaten roasted by some people, the skin being first peeled off. The Ainu in some districts, however, (Saru for example) do not use this plant as an article of diet.

82.—OROMUN or PEKAMBE-KUTTARA.

Senecio palmatus, Pall.

HANGONSŌ or NANATSUBA. (ハンゴンサウ・ナナツバ).

The young leaves of this plant are used as food by some Ainu. They are first well boiled, the water is then thrown away and the leaves washed in fresh water; after this they are recooked with other food.

At Mukawa, they are said to be eaten in the same way as *makayo* (See *Makayo*, No. 21.)

At the time when this plant is in full blossom *pekambe* is said to be ripe enough to be gathered. (See *Pekambe*, No. 69).

83.—SETA-KOROKONI.

Arctium Lappa, L.

Gobō. (ゴボウ). The Burdock.

The roots are eaten as a vegetable. It is said that those growing about Usu and Abuta are most noted. (See also No. 22.)

84.—ANTSAMI or AIUSH-KUTTARA.

Cnicus sps.

AZAMI. (アザミノ類). The Thistle.

The Ainu use thistles for food. When very young they cut them off close to the ground and use the whole head, but when they grow older the leaves only are taken. Young thistle heads boiled with fish is looked upon as a great treat, and the Ainu are very fond of it.

85.—HONOINOEP or EPITCHE-NONNO.

Taraxacum officinale, Wigg., var. corniculatum. Koch et Ziz.

TAMPOPO (タンポポ). The Dandelion.

The leaves of this plant are eaten boiled with stew.

86.—MUKEKASHI.

Adenophora verticillata, Fisch.

TSURIGANE-NINJIN or NUNOBA. (ツリガネニンジンヌノバ).

The root is the part which is chiefly eaten. It is eaten at once or dried and kept for future use. It is generally eaten boiled sometimes mixed with beans. The leaves are often put into soups.

87.—MUK.

Codonopsis ussuriensis, Hemsl.

BA-ASOBU. (バアソブ).

The roots of this plant are roundish and warty and are a little larger than a common walnut. These bulbs are used as an article of food and are eaten either raw or roasted according to the taste of the person partaking thereof.

88.—TOP-MUK.

Codonopsis lanceolata, Benth. et Hook.

TSURU-NINJIN. (ツルニンジン).

The roots of this plant are eaten in the same way as those of the *muk* (see No. 87). The bulbs are larger and longer but are not warty.

89.—AI-KARIP.

Vaccinium hirtum, L.

SUNOKI. (スノキ).

The fruit of this plant is eaten by the Ainu.

90.—HASHIPO or TOMAMASHI.

Ledum palustre, L. var. *dilatatum*, Wahl.

ISO-TSUTSUJI. (トソツジ).

A decoction made by steeping the leaves of this plant in hot water is used in the place of tea by the Ainu of some districts.

91.—IKEMA or PENUP.

Cynanchum caudatum, Maxim.

IKEMA. (イケマ).

As an article of food this plant is used very sparingly and only after having been well cooked (See No. 24).

92.—CHITUIREP or CHITUREP.

Metaplexis Stauntoni, Roem. et Sch.

GAGA-IMO. (ガガイモ).

The roots of this climber are used as food. The pod, which is called *chituirep-chippa*, is sometimes eaten in its raw state by the Ainu. I once saw a lad in convulsions and foaming at the mouth through eating too many raw pods of this plant. The roots are usually cooked before partaken of.

93.—KITESH or KEN.

Convolvulus japonicus, Th.

HIRUGAWO. (ヒルガワ).

The long slender roots of this plant are dug up in the spring and used as an article of food by the Ainu. They are eaten either roasted or boiled, alone or with other food, such as rice or millet. They are said to be very sweet to the taste and are much liked.

94.—SETA-ENDO.

Elsholtzia cristata, Willd.

NAGINATA-KÖJU. (ナギナタカウジウ).

A decoction is sometimes made by steeping the leaves of this plant in hot water and used as tea. (See No. 26.)

95.—ERUM-KINA or EREMU-KINA.

Plantago asiatica, L.

ŌBAKO. (オホバコ). The Plantain.

The root is the part used as an article of diet. It is eaten boiled. Some Ainu eat the seeds, after having been well pounded, with rice or millet.

96.—IKOKUTTARA.

Polygonum sachalinense, Fr. Schm.

Ō-ITADORI. (オホイタドリ).

The young shoots of this plant, which have a reddish tinge, are eaten by some Ainu. They have a slight acidity. The leaves are commonly employed when pickling the stalks of *Petasites* (*korokoni*). When so used first a layer of the leaves is spread over the bottom of a barrel, then a layer of *korokoni*, and so on till the barrel is full. The leaves impart a reddish colour and slight acidity to the pickle. (See No. 21.)

97.—KUTTARAAMAM.

Polygonum Weyrichii, Fr. Schm.

URAJIRO-TADE. (ウラジロタデ).

The fruit of this plant is collected by some Ainu and pounded in a mortar. The mashed fruit is eaten either boiled with millet or cooked in fish oil.

98.—SHUNAPA.

Rumex aquaticus, L., var. *japonicus*, Max.

MADAIWŌ. (マダイワウ).

The fruit of this plant is eaten by some Ainu. It is first pounded in a mortar and then partaken of either boiled alone or with rice. The leaves also are sometimes eaten in soups.

99.—SUSUMAU-NI.

Elæagnus umbellata, Thunb.

AKIGUMI. (アキグミ).

The fruit of this plant is first scalded and then eaten.

100.—NI-HARU.

Viscum album, L.

YADORIGI (ヤドリギ). The Mistletoe.

Some of the Chitose Ainu extract starch from the mistletoe branches by pounding them in a wooden mortar, and washing in water. However, mistletoe is not generally partaken of as food excepting in times of great scarcity. (See No. 30).

101.—YUK-TOPA-KINA.

Pachysandra terminalis, S. et Z.

FUKKISŌ or KICHJISŌ. (フッキサウ. キチジサウ).

The berries of this plant are eaten in their raw state.

102.—RIYAHAM-USHI.

Daphniphyllum humile, Maxim.

YEZO-YUZURIHA. (エゾユヅリハ).

The evergreen leaves of this shrub are sometimes dried and smoked in place of tobacco.

103.—KOSA.

Humulus Lupulus, L.

KARAHANA-SŌ. (カラハナサウ). The Wild Hop.

The root of this plant is eaten either boiled or roasted. It is of a sweet taste. It is generally dug in the spring, though occasionally in the autumn.

104.—TESHMA-NI or TUREP-NI.

Morus alba, L.

KUWA. (クワ). The Mulberry Tree.

The fruit, which is called *topembe*, is eaten raw.

105.—KAPAI.

Laportea bulbifera, Wedd.

MUKAGO-IRAKUSA. (ムカゴイラクサ).

The young shoots are gathered in the spring, boiled in two waters and then eaten. (See No. 81).

106.—MINCHI or MOSHI-KINA.

Pilea pumila, A. Gray.

MIZU. (ミズ). The Rich-weed.

The succulent semi-transparent stems are eaten boiled.

107.—NESHKO.

Juglans Sieboldiana, Maxim.

ONIGURUMI. (オニグルミ). The Walnut tree.

The Walnuts are called *Ninum*.

These form an article of diet among the Ainu, but as they are very thick shelled, making it difficult to extract the kernel, they are not thought much of.

108.—NISEU.

DONGURI. (ドンヅリ). Acorns.

These are eaten by the Ainu, especially those of *Quercus dentata*. The favourite way of eating them is to first boil them, though occasionally they take them roasted. They are not used in stews. Acorns are usually boiled in two or three waters before using; and are sometimes cooked till they become a paste, before partaken of.

The acorns of *Tun-ni* or *Kom-ni* (*Q. dentata*) are especially eaten, because they are less stringent and sweeter than the acorns of the *Quercus crispula* and *Quercus grosseserrata*, (*Chikapo-pero-ni* and *Shipero-ni*).

109.—YAM.

The fruit of *Castanea vulgaris*, Lam.

KURI. (クリ). The Chestnut.

Chestnuts form an important article of food among the Ainu. They prepare them in various ways. The favourite way is to well boil them, then take off the skins and pound them into a paste; they are then reboiled with millet or rice and eaten.

It is considered to be a great delicacy to mix the pounded chestnuts with the eggs of salmon or trout and boil them together. Another way is to mash them with the fat of animals. Sometimes they are eaten roasted, but in that case never by way of taking a meal. This latter way of cooking chestnuts is looked upon as more of an agreeable pastime than anything else.

110.—ENCHIKIMAIMAI or ICHIKIMAIMAI.

Empetrum nigrum, L.

GANKŌRAN or KOKENOMI. (ガンカウラン、コケノミ.)

The Crowberry.

The black berries are eaten raw. They have a slightly bitter taste.

111.—KANAT-NI or ANAT-NI.

Cephalotaxus drupacea, Z. et S.

INUGAYA or HYÖBU. (イヌガヤ. ヒョウブ).

The fleshy part of the drupe-like fruit is sometimes eaten by the Ainu. It has a sweet though slightly resinous taste.

112.—RARAMA-NI.

Taxus cuspidata, S. et Z.

ICHI-I or ONKO. (イチ井. オンコ). The Yew.

The fruit of the yew is sometimes eaten by children but is not used as a general article of diet.

113.—TODONUP or HENEKKERE.

Pinus pumila, Regel.

HAI-MASSU. (ハヒマツ).

The seeds of this dwarf-pine are much esteemed by the Ainu of the Kurile Islands as an article of diet.

114.—NIMAK-KOTUK.

Cremastra Wallichiana, Lindl.

SAIHAI-RAN. (サイハイラン).

The root of this orchid is sometimes eaten boiled. (For other uses see No. 36.)

115.—UNINTEP or UNINTEK-KI.

Gastrodia elata, Bl.

ONI-NO-YAGARA. (オニノヤガラ).

This plant is used by some Ainu for food. It is eaten boiled, but is not mixed with other articles of diet because its flavour is said not to be very inviting. The underground bulbs are the part used. They are collected in spring and are boiled with as little water as possible.

116.—ETORURATKIP.

Polygonatum giganteum, Dietr. var. *falcatum*, Maxim.

NARUKO-YURI. (ナルコユリ).

The root stock of this plant is eaten either boiled or roasted. (See also No. 38.)

117.—UKURU-KINA.

Funkia ovata, Spreng.

GIBŌ-SHI. (ギバウシ).

The white parts of the leaf stalks only of this plant are used for food. They are boiled with other things and are said to be very sweet and tender.

118.—SHIKUTURU or SHUKUTUT.

Allium schoenoprasum, L.

YEZO-NEGI. (エゾネギ). The Common Chive.

The bulbs and leaves of this plant are used as ordinary food. Many chop them up fine and boil them in their stews to give flavour to other articles of diet.

119.—MEMBIRU.

Allium nipponicum, Fr. et Sav.

NOBIRU. (ノビル).

The bulb of this plant is the part used. It is generally eaten fresh as a salad but is not dried and stored up. Sometimes, however, it is used as an ordinary food, especially to give flavour to other delicacies.

120.—PUKUSA.

Allium victorialis, L.

GYOJYA-NINNIKU or KITOBIRU. (ギヤウジヤニンニク. キトビル).

The bulb and the lower part of the leaves of this plant are used as food by the Ainu. They are taken in the early summer, chopped up fine, and dried for future use. This plant is often used as ordinary food to give flavour to other edible articles, and sometimes it is boiled in fat. It is also used as a medicine. (See No. 99.)

121.—TUREP.

Lilium Glehni, Fr. Schm.

ŌBA-UBAYURI or UMBAIRO. (オホウバイリ. ウンバイロ).

The Ainu extensively use the bulbs of this plant for food. They prepare them as follows. After having well washed the bulbs they pound them, in their raw state, in

a mortar. The flour or finer portion, which is called *irup*, is then separated from the coarser, and put in the sun to dry. When eaten this is generally made into a gruel and cooked with millet or rice. The coarser part, which is called *shit* and *shirari*, is boiled at once and then again pounded and put into a tub to decompose. When thoroughly rotten it is again boiled and pounded. After this it is made into large cakes, called *onturep* or *turep-akam*, with a hole in the centre, and hung up to dry. When needed for food the Ainu throw them into the millet pot and boil them. The flour is, it may be remarked, sometimes applied to burns.

122.—MASARA-ORUMBE.

Lilium dahuricum, *Gawl.*

YEZO-SUKASHI-YURI. (エゾスカシユリ).

The bulbs of this lily, which grows chiefly on the sandy beaches and river banks, are used as an article of diet. They are cooked in the same way as *niyokai*. (See No. 123.)

123.—NIYOKAI.

Lilium avenaceum, *Fisch.*

KURUMA-YURI. (クルマユリ).

The bulbs of this plant are the parts used. They are taken in the autumn, brought home, picked to pieces, and, having been thrown into the rice or millet pot are boiled. Sometimes they are eaten alone, but they are more generally mixed with other food.

124.—ANRAKORO.

Fritillaria kamtschatsensis, *Gawl.*

KURO-YURI. (クロユリ). The Black Lily.

The Ainu eat the bulb of this plant. It is dug up in the summer, brought home, washed, and boiled. When well cooked the bulbs are mashed and mixed with the fat of animals, or with rice.

The bulbs are often dried and stored away for future use, though many of them are eaten fresh. When any of that which has been stored is to be eaten it is generally reboiled in stew.

125.—ESHKERIMRIM.

Erythronium dens-canis, L.

KATAKURI. (カタクリ). The Dog's Tooth Violet.

The long solid scaled bulbs of this plant are used for food. They are taken and well washed and then thoroughly pounded in a mortar. The fine flowery portion is kept for use, and the coarser thrown away. When required, a little of the flour is put into a cup and hot water poured on it. By stirring, a kind of gruel is made, and this is drunk by itself. The *eshkerimrim* is never cooked with other food. The leaves are also collected by some Ainu and cooked as a vegetable. It is also said by some to be good for stomach-ache.

126.—CHIKAP-TOMA.

Gagea lutea, Ram. et Sch.

KIBANA-NO-AMANA. (キバオノアマナ).

The Yellow Star of Bethlehem.

The Ainu children eat the bulbs of this plant after roasting in a fire. The leaves are also put in soups.

127.—KINA-EMAURI.

Trillium kamschaticum, Pall.

SHIROBANA-NO-ENREISŌ. (シロバナノエンレイサウ).

The berry of this plant is used for food. It has a delicious taste with a slight trace of acidity.

128.—RAURAU.

Arisæma japonicum, Bl.

TENNANSHŌ (テンナンセウ.) Jack in the Pulpit.

The bulbs of this plant are eaten. They are dug up in the autumn, brought home and washed, and then put in the ashes upon the hearth to bake. They are never boiled. As

a certain part of the bulb is said to be very poisonous they have to be partaken of with great care; the good parts only are used as food and the poisonous carefully taken out and thrown away.

The basal part of the stalk and its continuation into the bulb is said to contain the poisonous property. This part is of a greenish colour and is very carefully picked out with a knife before using. The ashes appear to counteract the poisonous acid which is still left in the bulb, and to render it harmless.

129.—SHIKEREBE-KINA.

Symplocarpus fœtidus, Salisb.

ZAZENSŌ. (ザゼンサウ). The Skunk Cabbage.

The leaves are the parts used as food. They are first boiled and dried, and then cooked in soups.

130.—TOP.

Bambusa senanensis, Fr. et Sav.

YAMA-DAKE. (ヤマダケ).

The grain of this bamboo is sometimes collected by the Ainu and eaten in the same way as rice or millet. It is called *Kamui-amam*. The young shoots, which are much eaten by the Japanese, are not used by the Ainu.

131.—KAMUI-SOROMA.

Osmunda regalis, L.

ZEMMAI. (ゼンマイ). The Flowering Fern.

The young fronds are taken, and used as food, prepared in the same manner as *tuwa* (No. 133).

132.—SOROMA.

Onoclea germanica, Willd.

KUSA-SOTETSU or KOGOMI. (クサソテツ・コゴミ).

The sterile fronds of this fern are collected when young and soft, and are much eaten by both Ainu and Japanese. The Ainu generally put them into soups.

The fertile fronds of this fern, which appear later in season, are called by the Ainu *Airap-kina*. They are made into powder and are eaten by mixing with water and making into paste.

183.—TUWA.

Pteris aquilina, L.

WARABI. (ワラビ). The Brake.

The young fronds of this plant are taken and well boiled in fresh water and then dried for future use. When required for food they are mixed with other food and reboiled.

The Saru Ainu know how to extract the starch or *irup* from the rhizomes of the brake; they probably learned this from the Japanese.

184.—EHURUPESH-KINA.

Scolopendrium vulgare, Sm.

KOTANI-WATARI. (コタニワタリ). The Hart's Tongue.

The frond of this fern is sometimes smoked by some Ainu either alone or mixed with tobacco.

185.—PERO-NI-KARUSH, KOM-NI-KARUSH, or
TUN-NI-KARUSH.

Lepiota sp.

SHI-I-TAKE. (シヒタケ).

This kind of fungus is used for food; it grows both upon the green and decaying stems. It is extensively eaten by the Japanese, and even cultivated in certain districts.

186.—CHIKISA-NI-KARUSH.

Pleurotus ulmarius, Bull.

TAMOGI-TAKE. (タモギタケ).

The Ainu use this as food and are very fond of it. It is only eaten after having been well boiled.

137.—KENE-NI-KARUSH.

Pleurotus sp.

MUKI-TAKE. (ムキタケ).

This kind of fungus is used for food. It is eaten mixed with stews.

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